Contents of volume 48, 1999

Part 1

Empirical Bayes estimation for archaeological stratigraphy
G. T. Allum, R. G. Aykroyd and J. G. B. Haigh 1

A non-homogeneous hidden Markov model for precipitation occurrence
J. P. Hughes, P. Guttorp and S. P. Charles 15

Stochastic modelling of the invasion process of nematodes in fly larvae
M. J. Faddy and J. S. Fenlon 31

Comparing two measures of creatinine clearance: an application of errors-in-variables and bootstrap techniques *S. D. Oman, N. Meir and N. Haim* 39

Fitting Markov chain models to discrete state series such as DNA sequences
P. J. Avery and D. A. Henderson 53

Using quantile averages in matched observational studies *P. R. Rosenbaum* 63

Parametric relative survival regression using generalized linear models with application to Hodgkin's lymphoma *E. A. Weller, E. J. Feuer, C. M. Frey and M. N. Wesley* 79

Controlling processes in food technology by simplifying the canonical form of fitted response surfaces *S. G. Gilmour and T. J. Ringrose* 91

Influence of human immunodeficiency virus infection on neurological impairment: an analysis of longitudinal binary data with informative drop-out
X. Liu, C. Waternaux and E. Petkova 103

Information on sexual behaviour when some data are missing
G. M. Raab and C. A. Donnelly 117

Part 2

The effect of non-stationarity on extreme sea-level estimation
M. J. Dixon and J. A. Tawn 135

Unsupervised classification of chemical compounds
P. Guttiérrez Toscano and F. H. C. Marriott 153

The effectiveness of risk scores: the logit rank plot *J. Copas* 165

Modelling variability in the branching structure of strawberry inflorescences
M. S. Ridout, B. J. T. Morgan and D. R. Taylor 185

A basis function approach to position estimation using microwave arrays
A. R. Webb and P. N. Garner 197

Stochastic templates for aquaculture images and a parallel pattern detector
K. M. A. de Souza, J. T. Kent and K. V. Mardia 211

Modelling and analysis of data that exhibit temporal decay *M. J. Faddy and M. C. Jones* 229

A discrete variable chain graph for applicants for credit
E. Stanghellini, K. J. McConway and D. J. Hand 239

Multilevel modelling of the geographical distributions of diseases
I. H. Langford, A. H. Leyland, J. Rasbash and H. Goldstein 253

Part 3

The analysis of designed experiments and longitudinal data by using smoothing splines (with discussion) *A. P. Verbyla, B. R. Cullis, M. G. Kenward and S. J. Welham* 269

The use of resampling methods to simplify regression models in medical statistics
W. Sauerbrei 313

Frequency domain log-linear models; air pollution and mortality
J. E. Kelsall, S. L. Zeger and J. M. Samet 331

Venezuelan rainfall data analysed by using a Bayesian space–time model
B. Sansó and L. Guenni 345
The effect of drop-out on the efficiency of longitudinal experiments
G. Verbeke and E. Lesaffre 363
Parameter estimation in large dynamic paired comparison experiments *M. E. Glickman* 377
Comparison of two smoothing methods for exploring waning vaccine effects
L. K. Durham, M. E. Halloran, I. M. Longini, Jr, and A. K. Manatunga 395
Analysing financial returns by using regression models based on non-symmetric stable distributions *P. Lambert and J. K. Lindsey* 409
Acknowledgement *A. Hadgu and Y. Qu* 425

Part 4

Multitaper testing of spectral lines and the detection of the solar rotation frequency and its harmonics *D. G. T. Denison, A. T. Walden, A. Balogh and R. J. Forsyth* 427
Difference variance dispersion graphs for comparing response surface designs with applications in food technology *L. A. Trinca and S. G. Gilmour* 441
Design and analysis of two-phase studies with binary outcome applied to Wilms tumour prognosis *N. E. Breslow and N. Chatterjee* 457
Extremal analysis of short series with outliers: sea-levels and athletics records
M. I. Barão and J. A. Tawn 469
Detecting a changed segment in DNA sequences *P. J. Avery and D. A. Henderson* 489
Analysis of distance for structured multivariate data and extensions to multivariate analysis of variance *J. C. Gower and W. J. Krzanowski* 505
Using quantile plots of the prediction variance for comparing designs for a constrained mixture region: an application involving a fertilizer experiment
A. I. Khuri, J. M. Harrison and J. A. Cornell 521
Semiparametric estimation of regression quantiles with application to standardizing weight for height and age in US children *P. J. Heagerty and M. S. Pepe* 533
On the use of corrections for overdispersion *J. K. Lindsey* 553
Allowing for non-ignorable non-response in the analysis of voting intention data
P. W. F. Smith, C. J. Skinner and P. S. Clarke 563
Index of authors 579